Transmission Interconnection Combined Feasibility/System Impact Study Report

For

PJM Transmission Interconnection Request Queue Position Y3-030

Sandy Spring – High Ridge 230 kV

October 2013

Preface

The intent of the Combined Feasibility/System Impact Study is to determine a plan, with approximate cost and construction time estimates, to connect the subject transmission interconnection project to the PJM network at a location specified by the Interconnection Customer. As a requirement for merchant network project, the Interconnection Customer may be responsible for the cost of constructing: Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system. All facilities required for interconnection of a generation interconnection project must be designed to meet the technical specifications (on PJM web site) for the appropriate transmission owner.

In some instances an Interconnection Customer may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection or merchant transmission upgrade, may also contribute to the need for the same network reinforcement. The possibility of sharing the reinforcement costs with other projects may be identified in the Feasibility Study, but the actual allocation, if any, is included in the System Impact Study.

The Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs associated with them will be addressed when seeking an Interconnection Agreement as outlined below. Developer will also be responsible for providing and installing metering equipment in compliance with applicable PJM and Transmission Owner standards.

General

H-P Energy Resources LLC, the Interconnection Customer (IC), has proposed a merchant network upgrade located in North Laurel, MD. The proposed in-service date for this project is June 1, 2016. **This study does not imply a BGE commitment to this in-service date.**

Project Description

Y3-030 proposed to increase the emergency rating of each circuit of the double circuit Sandy Springs – High Ridge 230 kV line from existing 941 MVA to 1068 MVA through re-conductoring.

Cost Summary

The Y3-030 project will be responsible for the following costs:

Description	Total Cost
Direct Assignment Facilities	$ 0
Direct Connection Network Upgrades	$ 0
Non Direct Connection Network Upgrades	$ 0
Merchant Network Upgrades	$ 5,500,000
Total Costs	**$ 5,500,000**

Merchant Network Upgrade Cost Estimate

Sandy Spring to High Ridge 230 kV Re-conductor

Cost of re-conductor and tower reinforcements transmission towers is $5.5M. This estimate is in 2013 dollars and includes BGE overheads. The time required to complete the project is 24-30 months. New line rating will be 968/1227 MVA SN/SE. CPCN waiver may be possible otherwise the CPCN will add $100,000 to the estimated cost and an additional year.

Re-conductor 3.6 miles of double circuit with 1033MCM (Ortolan) two conductor bundle ACSR. This work spans 21 steel tower structures, and 4 of these will need to be reinforced, no towers need to be replaced. Two new steel single circuit dead-end steel poles will be required at High Ridge Substation. The cost of the CPCN waiver is included in the costs.

Incremental Auction Revenue Rights

The developer of the Y3-030 project has requested a non-binding estimate in the Facilities Study of the Incremental Auction Revenue Rights associated with this project in accordance with section 206.5.2 of the PJM OATT.

Network Impacts

Contingency Descriptions

The following contingencies resulted in overloads:

None.

Generator Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

None.

Multiple Facility Contingency

(Double Circuit Tower Line contingencies were studied for the full energy output. The contingencies of Line with Failed Breaker and Bus Fault will be performed for the Impact Study.)

None.

Short Circuit

(Summary of impacted circuit breakers)

New circuit breakers found to be over-duty:

None.

Contributions to previously identified circuit breakers found to be over-duty:

None.

Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

None.

Steady-State Voltage Requirements

(Summary of the VAR requirements based upon the results of the steady-state voltage studies)

None.

Stability and Reactive Power Requirement for Low Voltage Ride Through

(Summary of the VAR requirements based upon the results of the dynamic studies)

None.

New System Reinforcements

(Upgrades required to mitigate reliability criteria violations, i.e. Network Impacts, initially caused by the addition of this project generation)

None.

Contribution to Previously Identified System Reinforcements

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)

None.

Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.

None.